# Section 1. Registration Information

## Source Identification

| | |
|---|---|
| Facility Name: | Los Angeles Refinery Wilmington Plant |
| Parent Company #1 Name: | Phillips 66 Company |
| Parent Company #2 Name: | |

## Submission and Acceptance

| | |
|---|---|
| Submission Type: | Re-submission |
| Subsequent RMP Submission Reason: | 5-year update (40 CFR 68.190(b)(1)) |
| Description: | |
| Receipt Date: | 19-Jun-2009 |
| Postmark Date: | 19-Jun-2009 |
| Next Due Date: | 19-Jun-2014 |
| Completeness Check Date: | 25-May-2012 |
| Complete RMP: | Yes |
| De-Registration / Closed Reason: | |
| De-Registration / Closed Reason Other Text: | |
| De-Registered / Closed Date: | |
| De-Registered / Closed Effective Date: | |
| Certification Received: | Yes |

## Facility Identification

| | |
|---|---|
| EPA Facility Identifier: | 1000 0014 6843 |
| Other EPA Systems Facility ID: | 90748NCLLS1660W |

## Dun and Bradstreet Numbers (DUNS)

| | |
|---|---|
| Facility DUNS: | |
| Parent Company #1 DUNS: | 118819478 |
| Parent Company #2 DUNS: | 118819478 |

## Facility Location Address

| | |
|---|---|
| Street 1: | 1660 West Anaheim Street |
| Street 2: | |
| City: | Wilmington |
| State: | CALIFORNIA |
| ZIP: | 90744 |
| ZIP4: | |
| County: | LOS ANGELES |

## Facility Latitude and Longitude

| | |
|---|---|
| Latitude (decimal): | 33.778611 |
| Longitude (decimal): | -118.286389 |
| Lat/Long Method: | Interpolation - Photo |
| Lat/Long Description: | Plant Entrance (General) |
| Horizontal Accuracy Measure: | 25 |
| Horizontal Reference Datum Name: | North American Datum of 1983 |
| Source Map Scale Number: | 24000 |

## Owner or Operator

| | |
|---|---|
| Operator Name: | Phillips 66 Company |
| Operator Phone: | (310) 952-6000 |

## Mailing Address

| | |
|---|---|
| Operator Street 1: | 1660 West Anaheim Street |
| Operator Street 2: | |
| Operator City: | Wilmington |
| Operator State: | CALIFORNIA |
| Operator ZIP: | 90744 |
| Operator ZIP4: | |
| Operator Foreign State or Province: | |
| Operator Foreign ZIP: | |
| Operator Foreign Country: | |

## Name and title of person or position responsible for Part 68 (RMP) Implementation

| | |
|---|---|
| RMP Name of Person: | Chris Chandler |
| RMP Title of Person or Position: | Refinery Manager |
| RMP E-mail Address: | Chris.Chandler@P66.com |

## Emergency Contact

| | |
|---|---|
| Emergency Contact Name: | Al Cantu |
| Emergency Contact Title: | Field Svc &Emergency Response Super |
| Emergency Contact Phone: | (310) 952-6343 |
| Emergency Contact 24-Hour Phone: | (310) 952-6000 |
| Emergency Contact Ext. or PIN: | |
| Emergency Contact E-mail Address: | Al.Cantu@P66.com |

## Other Points of Contact

| | |
|---|---|
| Facility or Parent Company E-mail Address: | |
| Facility Public Contact Phone: | (310) 952-6000 |
| Facility or Parent Company WWW Homepage Address: | |

## Local Emergency Planning Committee

| | |
|---|---|
| LEPC: | California Region 1 LEPC |

## Full Time Equivalent Employees

| | |
|---|---|
| Number of Full Time Employees (FTE) on Site: | 411 |
| FTE Claimed as CBI: | |

## Covered By

| | |
|---|---|
| OSHA PSM : | Yes |
| EPCRA 302 : | Yes |
| CAA Title V: | Yes |
| Air Operating Permit ID: | 800363 |

## OSHA Ranking

OSHA Star or Merit Ranking:

## Last Safety Inspection

| | |
|---|---|
| Last Safety Inspection (By an External Agency) Date: | 24-Mar-2009 |
| Last Safety Inspection Performed By an External Agency: | Fire Department |

## Predictive Filing

Did this RMP involve predictive filing?:

## Preparer Information

Preparer Name:
Preparer Phone:
Preparer Street 1:
Preparer Street 2:
Preparer City:
Preparer State:
Preparer ZIP:
Preparer ZIP4:
Preparer Foreign State:
Preparer Foreign Country:
Preparer Foreign ZIP:

## Confidential Business Information (CBI)

CBI Claimed:
Substantiation Provided:
Unsanitized RMP Provided:

## Reportable Accidents

| | |
|---|---|
| Reportable Accidents: | See Section 6. Accident History below to determine if there were any accidents reported for this RMP. |

## Process Chemicals

| | |
|---|---|
| Process ID: | 1000005801 |
| Description: | Tank Farm |
| Process Chemical ID: | 1000006475 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |
| Quantity (lbs): | 16000000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

### Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 92986 |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 92988 |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 92985 |
| Chemical Name: | Butene |
| CAS Number: | 25167-67-3 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 92984 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 92987 |
| Chemical Name: | Propylene [1-Propene] |
| CAS Number: | 115-07-1 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005804 |
| Description: | Units 79/80, Unionfining/ |
| Process Chemical ID: | 1000006479 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Ammonia (anhydrous) |
| CAS Number: | 7664-41-7 |
| Quantity (lbs): | 60000 |
| CBI Claimed: | |
| Flammable/Toxic: | Toxic |

| | |
|---|---|
| Process ID: | 1000005800 |
| Description: | Cogeneration Plant |
| Process Chemical ID: | 1000006473 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Ammonia (anhydrous) |
| CAS Number: | 7664-41-7 |
| Quantity (lbs): | 59000 |
| CBI Claimed: | |
| Flammable/Toxic: | Toxic |

| | |
|---|---|
| Process ID: | 1000005801 |
| Description: | Tank Farm |
| Process Chemical ID: | 1000006474 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Butane |

| | |
|---|---|
| CAS Number: | 106-97-8 |
| Quantity (lbs): | 58082000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005806 |
| Description: | Unit 90, Mid-barrel Union |
| Process Chemical ID: | 1000006483 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |
| Quantity (lbs): | 304000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

## Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93000 |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93002 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93001 |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005809 |
| Description: | Units 119/120, Hydrogen/U |
| Process Chemical ID: | 1000006486 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |
| Quantity (lbs): | 650000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

## Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93009 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93012 |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |

| | |
|---|---|
| Flammable/Toxic: | Flammable |
| Flammable Mixture Chemical ID: | 93010 |
| Chemical Name: | Hydrogen |
| CAS Number: | 1333-74-0 |
| Flammable/Toxic: | Flammable |
| Flammable Mixture Chemical ID: | 93014 |
| Chemical Name: | Ethane |
| CAS Number: | 74-84-0 |
| Flammable/Toxic: | Flammable |
| Flammable Mixture Chemical ID: | 93011 |
| Chemical Name: | Methane |
| CAS Number: | 74-82-8 |
| Flammable/Toxic: | Flammable |
| Flammable Mixture Chemical ID: | 93013 |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005804 |
| Description: | Units 79/80, Unionfining/ |
| Process Chemical ID: | 1000006480 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Ammonia (conc 20% or greater) |
| CAS Number: | 7664-41-7 |
| Quantity (lbs): | 120000 |
| CBI Claimed: | |
| Flammable/Toxic: | Toxic |

| | |
|---|---|
| Process ID: | 1000005805 |
| Description: | Unit 89, Turbine Fuel Uni |
| Process Chemical ID: | 1000006482 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |
| Quantity (lbs): | 85000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

## Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 92998 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |
| Flammable Mixture Chemical ID: | 92999 |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |

| | |
|---|---|
| Flammable/Toxic: | Flammable |
| Flammable Mixture Chemical ID: | 92997 |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |
| Process ID: | 1000005802 |
| Description: | Truck & Rail |
| Process Chemical ID: | 1000006772 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Quantity (lbs): | 5900000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |
| Process ID: | 1000005804 |
| Description: | Units 79/80, Unionfining/ |
| Process Chemical ID: | 1000006481 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |
| Quantity (lbs): | 170000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

## Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 92995 |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Flammable/Toxic: | Flammable |
| Flammable Mixture Chemical ID: | 92994 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |
| Flammable Mixture Chemical ID: | 92996 |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |
| Process ID: | 1000005811 |
| Description: | Unit 60, Butamer |
| Process Chemical ID: | 1000006488 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |

| | |
|---|---|
| Quantity (lbs): | 61000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

## Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93020 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93021 |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005802 |
| Description: | Truck & Rail |
| Process Chemical ID: | 1000006477 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Quantity (lbs): | 7518000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005812 |
| Description: | Unit 59, Unionfining |
| Process Chemical ID: | 1000006489 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |
| Quantity (lbs): | 50000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

## Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93023 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93022 |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005807 |

| | |
|---|---|
| Description: | Unit 100, Unionfining/Ref |
| Process Chemical ID: | 1000006484 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |
| Quantity (lbs): | 490000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

## Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93004 |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93005 |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93003 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005810 |
| Description: | Unit 152, Fluid Catalytic |
| Process Chemical ID: | 1000006487 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |
| Quantity (lbs): | 1400000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

## Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93015 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93018 |
| Chemical Name: | Methane |
| CAS Number: | 74-82-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93019 |
| Chemical Name: | Ethane |
| CAS Number: | 74-84-0 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93016 |

| | |
|---|---|
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Flammable/Toxic: | Flammable |
| | |
| Flammable Mixture Chemical ID: | 93017 |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005803 |
| Description: | Unit 60, Penex Plus |
| Process Chemical ID: | 1000006478 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |
| Quantity (lbs): | 170000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

## Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 92993 |
| Chemical Name: | Hydrogen |
| CAS Number: | 1333-74-0 |
| Flammable/Toxic: | Flammable |
| | |
| Flammable Mixture Chemical ID: | 92990 |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Flammable/Toxic: | Flammable |
| | |
| Flammable Mixture Chemical ID: | 92989 |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |
| | |
| Flammable Mixture Chemical ID: | 92992 |
| Chemical Name: | Ethane |
| CAS Number: | 74-84-0 |
| Flammable/Toxic: | Flammable |
| | |
| Flammable Mixture Chemical ID: | 92991 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005808 |
| Description: | Unit 110, Alkylation |
| Process Chemical ID: | 1000006485 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Flammable Mixture |
| CAS Number: | 00-11-11 |

| | |
|---|---|
| Quantity (lbs): | 3500000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

### Flammable Mixture Chemical Components

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93008 |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93006 |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Flammable Mixture Chemical ID: | 93007 |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Process ID: | 1000005801 |
| Description: | Tank Farm |
| Process Chemical ID: | 1000006476 |
| Program Level: | Program Level 3 process |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Quantity (lbs): | 9100000 |
| CBI Claimed: | |
| Flammable/Toxic: | Flammable |

## Process NAICS

| | |
|---|---|
| Process ID: | 1000005800 |
| Process NAICS ID: | 1000006009 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 22111 |
| NAICS Description: | Electric Power Generation |

| | |
|---|---|
| Process ID: | 1000005801 |
| Process NAICS ID: | 1000006010 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005802 |
| Process NAICS ID: | 1000006011 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005803 |
| Process NAICS ID: | 1000006012 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005804 |
| Process NAICS ID: | 1000006013 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005805 |
| Process NAICS ID: | 1000006014 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005806 |
| Process NAICS ID: | 1000006015 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005807 |
| Process NAICS ID: | 1000006016 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005808 |
| Process NAICS ID: | 1000006017 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005809 |
| Process NAICS ID: | 1000006018 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005810 |
| Process NAICS ID: | 1000006019 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005811 |
| Process NAICS ID: | 1000006020 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

| | |
|---|---|
| Process ID: | 1000005812 |
| Process NAICS ID: | 1000006021 |
| Program Level: | Program Level 3 process |
| NAICS Code: | 32411 |
| NAICS Description: | Petroleum Refineries |

# Section 2. Toxics: Worst Case

## Toxic Worst ID: 1000004759

| | |
|---|---|
| Percent Weight: | 100.0 |
| Physical State: | Gas liquified by pressure |
| Model Used: | EPA's RMP*Comp(TM) |
| Release Duration (mins): | 10 |
| Wind Speed (m/sec): | 1.5 |
| Atmospheric Stability Class: | F |
| Topography: | Urban |

### Passive Mitigation Considered

| | |
|---|---|
| Dikes: | |
| Enclosures: | |
| Berms: | |
| Drains: | |
| Sumps: | |
| Other Type: | |

# Section 3. Toxics: Alternative Release

## Toxic Alter ID: 1000005273

| | |
|---|---|
| Percent Weight: | |
| Physical State: | Gas liquified by pressure |
| Model Used: | EPA's OCA Guidance Reference Tables or Equations |
| Wind Speed (m/sec): | 3.0 |
| Atmospheric Stability Class: | D |
| Topography: | Urban |

### Passive Mitigation Considered

| | |
|---|---|
| Dikes: | |
| Enclosures: | |
| Berms: | |
| Drains: | |
| Sumps: | |
| Other Type: | |

### Active Mitigation Considered

| | |
|---|---|
| Sprinkler System: | |
| Deluge System: | |
| Water Curtain: | |
| Neutralization: | |
| Excess Flow Valve: | |
| Flares: | |
| Scrubbers: | |
| Emergency Shutdown: | |
| Other Type: | |

## Toxic Alter ID: 1000005274

| | |
|---|---|
| Percent Weight: | 30.0 |
| Physical State: | Liquid |
| Model Used: | SLAB |
| Wind Speed (m/sec): | 3.0 |
| Atmospheric Stability Class: | D |
| Topography: | Urban |

### Passive Mitigation Considered

| | |
|---|---|
| Dikes: | |
| Enclosures: | |
| Berms: | |
| Drains: | |
| Sumps: | |
| Other Type: | |

### Active Mitigation Considered

| | |
|---|---|
| Sprinkler System: | |
| Deluge System: | |
| Water Curtain: | |
| Neutralization: | |
| Excess Flow Valve: | |
| Flares: | |
| Scrubbers: | |

Emergency Shutdown:
Other Type:

# Section 4. Flammables: Worst Case

## Flammable Worst ID: 1000002848

| | |
|---|---|
| Model Used: | EPA's RMP*Comp(TM) |
| Endpoint used: | 1 PSI |

### Passive Mitigation Considered

| | |
|---|---|
| Blast Walls: | |
| Other Type: | |

# Section 5. Flammables: Alternative Release

## Flammable Alter ID: 1000002672

Model Used: EPA's OCA Guidance Reference Tables or Equations

### Passive Mitigation Considered

Dikes:
Fire Walls:
Blast Walls:
Enclosures:
Other Type:

### Active Mitigation Considered

Sprinkler System:
Deluge System:
Water Curtain:
Excess Flow Valve:
Other Type:

# Section 6. Accident History

## Accident History ID: 1000021898

| | |
|---|---|
| Date of Accident: | 09-Oct-2011 |
| Time Accident Began (HHMM): | 0902 |
| NAICS Code of Process Involved: | 32411 |
| NAICS Description: | Petroleum Refineries |
| Release Duration: | 000 Hours 15 Minutes |

## Release Event

| | |
|---|---|
| Gas Release: | |
| Liquid Spill/Evaporation: | |
| Fire: | Yes |
| Explosion: | |
| Uncontrolled/Runaway Reaction: | |

## Release Source

| | |
|---|---|
| Storage Vessel: | |
| Piping: | |
| Process Vessel: | |
| Transfer Hose: | |
| Valve: | |
| Pump: | |
| Joint: | |
| Other Release Source: | Exchanger gasket seating surface |

## Weather Conditions at the Time of Event

| | |
|---|---|
| Wind Speed: | |
| Units: | |
| Direction: | |
| Temperature: | |
| Atmospheric Stability Class: | |
| Precipitation Present: | |
| Unknown Weather Conditions: | Yes |

## On-Site Impacts

| | |
|---|---|
| Employee or Contractor Deaths: | 0 |
| Public Responder Deaths: | 0 |
| Public Deaths: | 0 |
| Employee or Contractor Injuries: | 0 |
| Public Responder Injuries: | 0 |
| Public Injuries: | 0 |
| On-Site Property Damage ($): | 400000 |

## Known Off-Site Impacts

| | |
|---|---|
| Deaths: | 0 |
| Hospitalization: | 0 |
| Other Medical Treatments: | 0 |
| Evacuated: | 0 |

| | |
|---|---|
| Sheltered-in-Place: | 0 |
| Off-Site Property Damage ($): | 0 |

## Environmental Damage

| | |
|---|---|
| Fish or Animal Kills: | |
| Tree, Lawn, Shrub, or Crop Damage: | |
| Water Contamination: | |
| Soil Contamination: | |
| Other Environmental Damage: | |

## Initiating Event

| | |
|---|---|
| Initiating Event: | Equipment Failure |

## Contributing Factors

| | |
|---|---|
| Equipment Failure: | |
| Human Error: | |
| Improper Procedures: | |
| Overpressurization: | |
| Upset Condition: | |
| By-Pass Condition: | |
| Maintenance Activity/Inactivity: | |
| Process Design Failure: | |
| Unsuitable Equipment: | |
| Unusual Weather Condition: | |
| Management Error: | |
| Other Contributing Factor: | Gasket surface less than adequate at the flange joint |

## Off-Site Responders Notified

| | |
|---|---|
| Off-Site Responders Notified: | Notified and Responded |

## Changes Introduced as a Result of the Accident

| | |
|---|---|
| Improved or Upgraded Equipment: | |
| Revised Maintenance: | Yes |
| Revised Training: | |
| Revised Operating Procedures: | |
| New Process Controls: | |
| New Mitigation Systems: | |
| Revised Emergency Response Plan: | |
| Changed Process: | |
| Reduced Inventory: | |
| None: | |
| Other Changes Introduced: | |

## Confidential Business Information

| | |
|---|---|
| CBI Claimed: | |

## Chemicals in Accident History

| | |
|---|---|
| Accident Chemical ID: | 1000017147 |
| Quantity Released (lbs): | 3 |
| Percent Weight: | |
| Chemical Name: | Butane |
| CAS Number: | 106-97-8 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Accident Chemical ID: | 1000017148 |
| Quantity Released (lbs): | 7 |
| Percent Weight: | |
| Chemical Name: | Pentane |
| CAS Number: | 109-66-0 |
| Flammable/Toxic: | Flammable |

| | |
|---|---|
| Accident Chemical ID: | 1000017150 |
| Quantity Released (lbs): | 1 |
| Percent Weight: | |
| Chemical Name: | Propane |
| CAS Number: | 74-98-6 |
| Flammable/Toxic: | Flammable |

# Section 7. Program Level 3

## Description

Cogeneration Plant

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005043 |
| Chemical Name: | Ammonia (anhydrous) |
| Flammable/Toxic: | Toxic |
| CAS Number: | 7664-41-7 |
| Prevention Program Level 3 ID: | 1000004300 |
| NAICS Code: | 22111 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 10-Nov-2005 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 30-Dec-2008 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | Yes |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | Yes |
| Overfilling: | Yes |
| Contamination: | |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |

| | |
|---|---|
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | Yes |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | Yes |
| Emergency Air Supply: | Yes |
| Emergency Power: | Yes |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | |
| Rupture Disks: | Yes |
| Excess Flow Device: | Yes |
| Quench System: | |
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | fire monitors, dry chemical system, onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | Yes |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | fire detection system, operator surveillance |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | Yes |

| | |
|---|---|
| Installation of Process Detection Systems: | Yes |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | improved mechanical integrity inspection and materials |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 30-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 25-Mar-2009 |
| Equipment Tested (Equipment most recently inspected or tested): | Ammonia storage drum |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 22-Apr-2009 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 08-Jan-2009 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

CBI Claimed:

## Description

Tank Farm

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005044 |
| Chemical Name: | Butane |
| Flammable/Toxic: | Flammable |
| CAS Number: | 106-97-8 |
| Prevention Program Level 3 ID: | 1000004301 |
| NAICS Code: | 32411 |
| Prevention Program Chemical ID: | 1000005046 |
| Chemical Name: | Pentane |
| Flammable/Toxic: | Flammable |
| CAS Number: | 109-66-0 |
| Prevention Program Level 3 ID: | 1000004301 |
| NAICS Code: | 32411 |
| Prevention Program Chemical ID: | 1000005045 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |
| Prevention Program Level 3 ID: | 1000004301 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 02-Feb-2005 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 01-Feb-2010 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | Yes |
| Overfilling: | Yes |
| Contamination: | |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | Yes |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | |
| Emergency Air Supply: | |
| Emergency Power: | |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | |
| Rupture Disks: | |
| Excess Flow Device: | Yes |
| Quench System: | |
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | Yes |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | fire monitors, onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | Yes |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | |
| Installation of Process Detection Systems: | |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | Yes |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 31-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 31-Dec-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | Computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 13-Apr-2008 |

| | |
|---|---|
| Equipment Tested (Equipment most recently inspected or tested): | F-311 flare knock out drum |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 20-Mar-2009 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 08-Jul-2005 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

CBI Claimed:

## Description

Truck & Rail

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005332 |
| Chemical Name: | Pentane |
| Flammable/Toxic: | Flammable |
| CAS Number: | 109-66-0 |
| Prevention Program Level 3 ID: | 1000004302 |
| NAICS Code: | 32411 |
| Prevention Program Chemical ID: | 1000005047 |
| Chemical Name: | Butane |
| Flammable/Toxic: | Flammable |
| CAS Number: | 106-97-8 |
| Prevention Program Level 3 ID: | 1000004302 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 04-May-2005 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 31-Dec-2009 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | |
| Overfilling: | Yes |
| Contamination: | |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | Yes |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | |
| Emergency Air Supply: | |
| Emergency Power: | |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | |
| Rupture Disks: | |
| Excess Flow Device: | |
| Quench System: | |
| Purge System: | |
| None: | |
| Other Process Control in Use: | |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | |
| Dikes: | |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | Yes |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | fire monitors, onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | Yes |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | |
| Installation of Process Detection Systems: | |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | improved mechanical integrity inspections and materials |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 30-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 11-Jul-2008 |

| | |
|---|---|
| Equipment Tested (Equipment most recently inspected or tested): | Tank 443 |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 16-Jun-2008 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 28-Jun-2007 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |

| | |
|---|---|
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

CBI Claimed:

## Description

Unit 60 Penex Plus

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005048 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |
| Prevention Program Level 3 ID: | 1000004303 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 18-May-2009 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 31-Dec-2012 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | |

| | |
|---|---|
| Overfilling: | |
| Contamination: | |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | Yes |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | Yes |
| Emergency Air Supply: | Yes |
| Emergency Power: | Yes |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | |
| Rupture Disks: | |
| Excess Flow Device: | |
| Quench System: | Yes |
| Purge System: | |
| None: | |
| Other Process Control in Use: | |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | Yes |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | fire monitors, onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | operator surveillance |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | Yes |
| Installation of Process Detection Systems: | Yes |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | improved mechanical integrity monitoring and materials |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 30-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 10-Dec-2008 |
| Equipment Tested (Equipment most recently inspected or tested): | F-152E instrument air filter |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 20-May-2009 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 29-Feb-2008 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

| | |
|---|---|
| CBI Claimed: | |

## Description

Units 79/80, Unifining / Reforming

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005050 |
| Chemical Name: | Ammonia (conc 20% or greater) |
| Flammable/Toxic: | Toxic |
| CAS Number: | 7664-41-7 |
| Prevention Program Level 3 ID: | 1000004304 |
| NAICS Code: | 32411 |
| Prevention Program Chemical ID: | 1000005049 |
| Chemical Name: | Ammonia (anhydrous) |
| Flammable/Toxic: | Toxic |
| CAS Number: | 7664-41-7 |
| Prevention Program Level 3 ID: | 1000004304 |
| NAICS Code: | 32411 |
| Prevention Program Chemical ID: | 1000005051 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |
| Prevention Program Level 3 ID: | 1000004304 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 09-Apr-2007 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |

| | |
|---|---|
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 01-Apr-2011 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | Yes |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | Yes |
| Overfilling: | Yes |
| Contamination: | Yes |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | Yes |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | Yes |
| Emergency Air Supply: | Yes |
| Emergency Power: | |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | Yes |
| Rupture Disks: | Yes |
| Excess Flow Device: | Yes |
| Quench System: | |
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | emergency depressuring valve |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | |
| Water Curtain: | |
| Enclosure: | |

| | |
|---|---|
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | fire monitors, onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | operator surveillance |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | Yes |
| Installation of Process Detection Systems: | |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | update perchloroethylene storage and injection system |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 30-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |

| | |
|---|---|
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 29-Apr-2008 |
| Equipment Tested (Equipment most recently inspected or tested): | F-801 make gas knockout drum |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 16-Apr-2009 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 15-May-2009 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |

| | |
|---|---|
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

CBI Claimed:

## Description

Unit 89, Turbine Fuel Unifining

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005052 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |

| | |
|---|---|
| Prevention Program Level 3 ID: | 1000004305 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 03-Mar-2005 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 30-Jun-2006 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | Yes |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | |
| Polymerization: | |

| | |
|---|---|
| Overpressurization: | Yes |
| Corrosion: | Yes |
| Overfilling: | |
| Contamination: | |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | Yes |
| Emergency Air Supply: | Yes |
| Emergency Power: | Yes |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | Yes |
| Rupture Disks: | |
| Excess Flow Device: | |
| Quench System: | |
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | emergency depressuring valve |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | Yes |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | Yes |
| Perimeter Monitors: | Yes |
| None: | |
| Other Monitoring/Detection System in Use: | operator surveillance |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | Yes |
| Installation of Process Detection Systems: | |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | Mechanical Integrity improved monitoring and materials |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 31-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 15-Mar-2008 |
| Equipment Tested (Equipment most recently inspected or tested): | F-118 400lb steam knock out pot |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 13-May-2008 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 20-May-2008 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

| | |
|---|---|
| CBI Claimed: | |

## Description

Unit 90, Mid-barrel Unifining

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005053 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |
| Prevention Program Level 3 ID: | 1000004306 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 12-Mar-2007 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 01-Mar-2011 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | Yes |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | Yes |
| Overfilling: | |
| Contamination: | |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |

| | |
|---|---|
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | Yes |
| Emergency Air Supply: | Yes |
| Emergency Power: | Yes |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | Yes |
| Rupture Disks: | |
| Excess Flow Device: | |
| Quench System: | |
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | emergency depressuring valve |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | Yes |
| Perimeter Monitors: | Yes |
| None: | |
| Other Monitoring/Detection System in Use: | |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | Yes |
| Change Process Parameters: | Yes |
| Installation of Process Controls: | Yes |
| Installation of Process Detection Systems: | |

| | |
|---|---|
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | Yes |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | new cooling water tower , vessels taken out of service, new vessels added |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 30-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | computer based tarining |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 10-Feb-2009 |
| Equipment Tested (Equipment most recently inspected or tested): | F -205 feed surge drum |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 08-May-2009 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 04-Jun-2009 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

CBI Claimed:

## Description

Unit 100, Unifining / Reforming

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005054 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |
| Prevention Program Level 3 ID: | 1000004307 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 23-Oct-2008 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 31-Dec-2012 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | Yes |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | Yes |
| Overfilling: | |
| Contamination: | |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | |
| Relief Valves: | Yes |

| | |
|---|---|
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | Yes |
| Emergency Air Supply: | Yes |
| Emergency Power: | Yes |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | Yes |
| Rupture Disks: | |
| Excess Flow Device: | |
| Quench System: | |
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | emergency depressuring valve |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | operator surveillance |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | Yes |
| Installation of Process Detection Systems: | |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | Improved mechanical intregrity inspections/materials |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 31-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 23-Jan-2009 |
| Equipment Tested (Equipment most recently inspected or tested): | V-8 sulfuric acid tank |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 20-May-2009 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 19-May-2008 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

| | |
|---|---|
| CBI Claimed: | |

## Description

Unit 110, Alkylation

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005055 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |
| Prevention Program Level 3 ID: | 1000004308 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 22-Apr-2005 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 30-Mar-2010 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | Yes |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | Yes |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | Yes |
| Overfilling: | Yes |
| Contamination: | Yes |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | Yes |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | Yes |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | |
| Emergency Air Supply: | Yes |

| | |
|---|---|
| Emergency Power: | Yes |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | |
| Rupture Disks: | |
| Excess Flow Device: | |
| Quench System: | Yes |
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | Yes |
| Deluge System: | Yes |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | Yes |
| None: | |
| Other Mitigation System in Use: | fire monitors, onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | Yes |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | operator surveillance |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | Yes |
| Change Process Parameters: | Yes |
| Installation of Process Controls: | Yes |
| Installation of Process Detection Systems: | Yes |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | Yes |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | Improved mechanical integrity monitoring and materials, upgraded control room structure |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 30-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 01-Apr-2009 |
| Equipment Tested (Equipment most recently inspected or tested): | control room pressurization |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 14-May-2009 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 05-May-2009 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

| | |
|---|---|
| CBI Claimed: | |

## Description

Units 119 / 120, Hydrogen Plant / Unicracker

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005056 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |
| Prevention Program Level 3 ID: | 1000004309 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 10-Dec-2007 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 30-Dec-2010 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | Yes |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | Yes |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | Yes |
| Overfilling: | Yes |
| Contamination: | |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | Yes |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | |
| Emergency Air Supply: | Yes |
| Emergency Power: | Yes |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | Yes |
| Rupture Disks: | Yes |
| Excess Flow Device: | |
| Quench System: | Yes |

| | |
|---|---|
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | emergency depressuring system |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | Yes |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | Yes |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | operator surveillance |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | Yes |
| Installation of Process Detection Systems: | |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | improved mechanical integrity monitoring and materials |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 30-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 03-Dec-2008 |
| Equipment Tested (Equipment most recently inspected or tested): | F-320A/B secondary seal pot |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 09-Jun-2009 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 27-Mar-2009 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

CBI Claimed:

## Description

Unit 152, Fluid Catalytic Cracking

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005057 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |
| Prevention Program Level 3 ID: | 1000004310 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 03-Nov-2008 |

## The Technique Used

What If:

Checklist:

| | |
|---|---|
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 31-Dec-2011 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | Yes |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | Yes |
| Overfilling: | |
| Contamination: | |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | Yes |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | Yes |
| Emergency Air Supply: | Yes |
| Emergency Power: | Yes |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | |
| Rupture Disks: | |
| Excess Flow Device: | |
| Quench System: | Yes |
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | Yes |
| Dikes: | Yes |

| | |
|---|---|
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | Yes |
| Water Curtain: | Yes |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | fire monitors, onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | Yes |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | operator surveillance |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | Yes |
| Installation of Process Detection Systems: | |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | Added a wet gas scrubber to process, improved mechanical integrity materials |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 30-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | Computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | computer based training |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 01-Oct-2008 |
| Equipment Tested (Equipment most recently inspected or tested): | startup of new wet gas scrubber |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 12-May-2009 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 29-Oct-2008 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

CBI Claimed:

## Description

Unit 60 Butamer

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005058 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |
| Prevention Program Level 3 ID: | 1000004311 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 13-Feb-2006 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 30-May-2009 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | Yes |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | Yes |
| Overfilling: | |
| Contamination: | Yes |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | Yes |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | Yes |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | |
| Emergency Air Supply: | Yes |
| Emergency Power: | |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | |
| Rupture Disks: | |
| Excess Flow Device: | Yes |
| Quench System: | Yes |
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | fire monitors, onsite fire station & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | operator surveillance |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | Yes |
| Installation of Process Detection Systems: | |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | Yes |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | improved mechical integrity inspection and materials |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 30-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 08-Jan-2008 |

| | |
|---|---|
| Equipment Tested (Equipment most recently inspected or tested): | E-310SS Regenerant aftercooler |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 10-Jun-2008 |
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 12-Jun-2008 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |

| | |
|---|---|
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

CBI Claimed:

## Description

Unit 59, Unionfining

## Program Level 3 Prevention Program Chemicals

| | |
|---|---|
| Prevention Program Chemical ID: | 1000005059 |
| Chemical Name: | Flammable Mixture |
| Flammable/Toxic: | Flammable |
| CAS Number: | 00-11-11 |
| Prevention Program Level 3 ID: | 1000004312 |
| NAICS Code: | 32411 |

## Safety Information

| | |
|---|---|
| Safety Review Date (The date on which the safety information was last reviewed or revised): | 01-Feb-2008 |

## Process Hazard Analysis (PHA)

| | |
|---|---|
| PHA Completion Date (Date of last PHA or PHA update): | 17-Jan-2006 |

## The Technique Used

| | |
|---|---|
| What If: | |
| Checklist: | |
| What If/Checklist: | |
| HAZOP: | Yes |
| Failure Mode and Effects Analysis: | |
| Fault Tree Analysis: | |
| Other Technique Used: | |
| PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): | 30-Dec-2007 |

## Major Hazards Identified

| | |
|---|---|
| Toxic Release: | Yes |
| Fire: | Yes |
| Explosion: | Yes |
| Runaway Reaction: | |
| Polymerization: | |
| Overpressurization: | Yes |
| Corrosion: | Yes |

| | |
|---|---|
| Overfilling: | Yes |
| Contamination: | Yes |
| Equipment Failure: | Yes |
| Loss of Cooling, Heating, Electricity, Instrument Air: | Yes |
| Earthquake: | Yes |
| Floods (Flood Plain): | |
| Tornado: | |
| Hurricanes: | |
| Other Major Hazard Identified: | |

## Process Controls in Use

| | |
|---|---|
| Vents: | |
| Relief Valves: | Yes |
| Check Valves: | Yes |
| Scrubbers: | |
| Flares: | Yes |
| Manual Shutoffs: | Yes |
| Automatic Shutoffs: | Yes |
| Interlocks: | Yes |
| Alarms and Procedures: | Yes |
| Keyed Bypass: | Yes |
| Emergency Air Supply: | Yes |
| Emergency Power: | Yes |
| Backup Pump: | Yes |
| Grounding Equipment: | Yes |
| Inhibitor Addition: | |
| Rupture Disks: | Yes |
| Excess Flow Device: | |
| Quench System: | |
| Purge System: | Yes |
| None: | |
| Other Process Control in Use: | emergency depressuring valve |

## Mitigation Systems in Use

| | |
|---|---|
| Sprinkler System: | |
| Dikes: | Yes |
| Fire Walls: | |
| Blast Walls: | |
| Deluge System: | |
| Water Curtain: | |
| Enclosure: | |
| Neutralization: | |
| None: | |
| Other Mitigation System in Use: | fire monitors, onsite fire station, & emergency response team |

## Monitoring/Detection Systems in Use

| | |
|---|---|
| Process Area Detectors: | |
| Perimeter Monitors: | |
| None: | |
| Other Monitoring/Detection System in Use: | operator surveillance |

## Changes Since Last PHA Update

| | |
|---|---|
| Reduction in Chemical Inventory: | |
| Increase in Chemical Inventory: | |
| Change Process Parameters: | |
| Installation of Process Controls: | |
| Installation of Process Detection Systems: | |
| Installation of Perimeter Monitoring Systems: | |
| Installation of Mitigation Systems: | |
| None Recommended: | |
| None: | |
| Other Changes Since Last PHA or PHA Update: | improved mechanical integrity monitoring |

## Review of Operating Procedures

| | |
|---|---|
| Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): | 30-Dec-2008 |

## Training

| | |
|---|---|
| Training Revision Date (The date of the most recent review or revision of training programs): | 01-Jun-2008 |

## The Type of Training Provided

| | |
|---|---|
| Classroom: | Yes |
| On the Job: | Yes |
| Other Training: | computer based training |

## The Type of Competency Testing Used

| | |
|---|---|
| Written Tests: | Yes |
| Oral Tests: | Yes |
| Demonstration: | Yes |
| Observation: | Yes |
| Other Type of Competency Testing Used: | |

## Maintenance

| | |
|---|---|
| Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): | 01-Jan-2009 |
| Equipment Inspection Date (The date of the most recent equipment inspection or test): | 29-Apr-2008 |
| Equipment Tested (Equipment most recently inspected or tested): | F-221 Unionfiner reactor charge drum |

## Management of Change

| | |
|---|---|
| Change Management Date (The date of the most recent change that triggered management of change procedures): | 18-Mar-2009 |

| | |
|---|---|
| Change Management Revision Date (The date of the most recent review or revision of management of change procedures): | 01-Jun-2009 |

## Pre-Startup Review

| | |
|---|---|
| Pre-Startup Review Date (The date of the most recent pre-startup review): | 19-Mar-2009 |

## Compliance Audits

| | |
|---|---|
| Compliance Audit Date (The date of the most recent compliance audit): | 03-May-2007 |
| Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): | 31-Dec-2010 |

## Incident Investigation

| | |
|---|---|
| Incident Investigation Date (The date of the most recent incident investigation (if any)): | |
| Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): | |

## Employee Participation Plans

| | |
|---|---|
| Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): | 01-Mar-2009 |

## Hot Work Permit Procedures

| | |
|---|---|
| Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): | 01-Nov-2007 |

## Contractor Safety Procedures

| | |
|---|---|
| Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): | 01-May-2008 |
| Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): | 19-Nov-2008 |

## Confidential Business Information

| | |
|---|---|
| CBI Claimed: | |

# Section 8. Program Level 2

# Section 9. Emergency Response

## Written Emergency Response (ER) Plan

| | |
|---|---|
| Community Plan (Is facility included in written community emergency response plan?): | Yes |
| Facility Plan (Does facility have its own written emergency response plan?): | Yes |
| Response Actions (Does ER plan include specific actions to be taken in response to accidental releases of regulated substance(s)?): | Yes |
| Public Information (Does ER plan include procedures for informing the public and local agencies responding to accidental release?): | Yes |
| Healthcare (Does facility's ER plan include information on emergency health care?): | Yes |

## Emergency Response Review

| | |
|---|---|
| Review Date (Date of most recent review or update of facility's ER plan): | 30-Dec-2008 |

## Emergency Response Training

| | |
|---|---|
| Training Date (Date of most recent review or update of facility's employees): | 14-May-2009 |

## Local Agency

| | |
|---|---|
| Agency Name (Name of local agency with which the facility ER plan or response activities are coordinated): | Los Angeles City Fire Department |
| Agency Phone Number (Phone number of local agency with which the facility ER plan or response activities are coordinated): | (310) 832-4241 |

## Subject to

| | |
|---|---|
| OSHA Regulations at 29 CFR 1910.38: | Yes |
| OSHA Regulations at 29 CFR 1910.120: | Yes |
| Clean Water Regulations at 40 CFR 112: | Yes |
| RCRA Regulations at CFR 264, 265, and 279.52: | Yes |
| OPA 90 Regulations at 40 CFR 112, 33 CFR 154, 49 CFR 194, or 30 CFR 254: | Yes |
| State EPCRA Rules or Laws: | Yes |
| Other (Specify): | |

# Executive Summary

CONOCOPHILLIPS LOS ANGELES REFINERY WILMINGTON PLANT
RISK MANAGEMENT PLAN
EXECUTIVE SUMMARY
FEDERAL EPA PROGRAM

ACCIDENTAL RELEASE PREVENTION AND RESPONSE POLICIES

ConocoPhillips' Los Angeles Refinery (LAR)is fully committed to a program of responsible management in all areas, including health, environment, and worker and public safety. In fulfilling this commitment, management systems are in place to provide the resources and training to maintain compliance with the Occupational Safety and Health Administration's (OSHA) Process Safety Management (PSM)standard, ensuring that safety is incorporated into the design, installation, operation, and maintenance of our processes. Accident prevention is achieved through strict adherance to operating procedures, safe work practices, ongoing training, and administrative and operational controls. While continually striving to prevent accidental releases, should one occur, the refinery maintains a well-trained and equipped Emergency Response Team for fast response and incident mitigation and control.

DESCRIPTION OF THE STATIONARY SOURCE AND REGULATED SUBSTANCES

The ConocoPhillips Los Angeles Refinery Wilmington Plant, located in Wilmington, California, operates a variety of processes designed to take intermediate oil products from ConocoPhillips'Carson Plant and upgrade/modify them to produce a variety of refinery products including gasoline, jet fuel, diesel fuel and other petroleum products. The refinery produces and/or uses regulated flammables, including propane, butane, hydrogen, pentane and mixtures of regulated flammable substances. In addtion the refinery uses both aqueous (30% ammonia)and anhydrous ammonia, both of which are regulated toxic substances, for pollution control of equipment.

GENERAL ACCIDENTAL RELEASE PREVENTION PROGRAM STEPS

The ConocoPhillips Los Angeles Refinery has a comprehensive accidental release prevention program that follows the elements found in the OSHA PSM standard to prevent incidents from occurring. The following is a summary of these elements and a description of the management system that is in place to implement the prevention program.

Employee Participation

Active employee participation is regarded as essential to the continuous improvement of the LAR PSM program, and hence in the prevention of accidents. LAR has a written employee participation policy that outlines the many ways in which employees are involved in the accident prevention program,

and employees have access to all information generated within the program. All process hazard analysis teams include an experienced unit operatorand unit engineer. Employees are also members of teams formed for compliance audits, incident investigations, and pre-startup safety reviews. The plant emergency response team is comprised of qualified employees who receive specialized training and participate in emergency drills. Employees are expected to report incidents that may occur, as well as any safety concerns they may have. Employee assistance is enlisted to develop training programs and operating procedures and compile other critical process information. Additionally, LAR has various safety programs designed to increase plant safety by encouraging employee involvement.

Process Safety Information

LAR maintains key technical documents that contain information essential to safe operation of the various processes. This information is accessible to employees to facilitate the identification and understanding of hazards posed by chemicals used or produced in the processes and includes chemical hazard, process technology, and equipment information.

Material Safety Data Sheets (MSDSs) have been compiled for all chemicals used onsite, whether or not they are deemed hazardous. MSDSs include information regarding a chemical's toxicity, corrosivity, thermal and chemical stability, permissible exposure limits, hazardous effects of inadvertent mixing with other materials, and other physical data.

Operating Infomation manuals and refinery process overviews are maintained for the various process units. Information available includes process flow diagrams, hazards associated with the process, safe operating limits for process parameters, consequences of deviation from design criteria, controls, locations of safety equipment and inventory.

Equipment design and construction documents on file include information such as process and instrumentation diagrams, construction specifications and materials, and electrical classifications.

Process Hazard Analysis

LAR conducts a comprehensive program to identify potential hazards that may be associated with processes in the various units and thereby control/properly manage them.

The Hazard and Operability (HAZOP) technique is the type of process hazard analysis (PHA) utilized at LAR to ensure that a systematic study of each process is carried out. The HAZOP analysis is recognized by experts as a very comprehensive hazard evaluation technique. The typical HAZOP team includes

a knowledgeable operator and unit engineer who systematically analyze detailed process drawings to identify potential hazards. These potential hazards are assigned a risk rank according to specified criteria. The team evaluates accident prevention and mitigation measures already in place and makes recommendations if they believe additional measures are necessary.

Findings of the team are documented and reviewed by management for resolution. Hazards assigned the highest risk rank are given priority, thereby ensuring that each hazard receives the appropriate attention. All approved mitigation measures are tracked to completion. Documentation is retained as to the resolution of all PHA findings. Additionally, oversite is provided by ConocoPhillips Executive Management. They review metrics provided by the refinery that focus on risk reduction and timely closure of action items.

Revalidation of PHAs have been conducted at least every 5 years, or when a major process change is to be implemented, to ensure that process controls do not significantly deviate from the original design safety features. Again, documented findings are forwarded to management to ensure that critical mitigation recommendations are implemented.

Operating Procedures

LAR has set forth detailed written procedures with step by step instructions for the various modes of process operations, including startup, normal and temporary operations, emergency operations and shutdown, and normal shutdown. These procedures are accessible to employees for reference and training and kept evergreen by revisions implemented through the management of change process, periodic review, and annual accuracy certification.

Training

All employees of LAR that are involved in operating a process are trained in the process and its operating procedures. This training emphasizes safety and health hazard issues, emergency operations, and safe work practices. Refresher training is provided at least every 3 years to maintain a clear understanding of current operations and any process modifications that may have occurred. Employee comprehension of training is verified, and documentation is maintained. Additionally, operating employees receive required safety training annually.

Contractors

Contractors are utilized at LAR to supplement employees when increased or specialized activities are conducted. Prior to final contractor selection, the contract employer's safety performance and program are evaluated. LAR provides contractors with a process overview, safety/hazard and safe work practice information, and emergency response requirements to ensure appropriate knowledge to safely work at a process unit. In addition, the refinery monitors contractor performance and compiles a contract employee injury and illness log to ensure that a good safety record is maintained.

Pre-Startup Safety Reviews

LAR conducts pre-startup safety reviews (PSSRs) for all new facilities or modifications to facilities that change existing process safety information. These PSSRs ensure that important aspects of a project, such as safety, procedures, personnel, and equipment, are prepared and reviewed before equipment is placed in service.

Mechanical Integrity

Procedures are maintained at LAR to ensure the integrity of process equipment including pressure vessels, storage tanks, piping systems, relief and vent systems/devices, emergency shutdown systems, controls, and pumps. Inspection and testing are key components of the mechanical integrity program, with elements and frequency following accepted industry good,engineering practices and manufacturers' recommendations, augmented by operating experience. All work is documented. Deficiencies that are identified are corrected prior to further use of the equipment or reviewed by a qualified team to determine actions to be taken to ensure safe operations. Quality assurance measures are in place to ensure that new equipment is suitable to the service for which it is intended and is properly installed. Maintenance materials and spare parts are also checked for compatibility with the process and equipment. Employees involved in maintaining process equipment integrity are trained on the process, its hazards, and safe work practices and procedures.

Safe Work Practices

Adherence to safe work practices is deemed imperative at LAR to help ensure that operations and maintenance activities are performed safely. These safe work practices include: 1) a permitting system to authorize and control any hot work (spark-producing) activities, 2) a confined space entry permitting system, 3) procedures to safely remove hazardous materials from equipment and piping prior to performing work on or within them, and 4) a lockout/ tagout system to confirm that equipment undergoing maintenance is isolated from its energy source.

Management of Change

All process changes that occur at LAR are managed via a comprehensive management of change(MOC)system. Managed changes include those to process chemicals, technology, equipment, procedures and facilities. Special consideration is given to the technical basis for the change, as well as safety and health impacts, operating procedure modifications, time period for the change and authorization requirements. All changes are reviewed and approved by knowledgeable personnel from various disciplines to ensure that potential new hazards are managed and any controls in place are not adversely affected. Affected employees and contract workers receive training on the change prior to its implementation. In addition, process safety information and operating procedures are revised to reflect any changes.

Incident Investigation

Should an incident occur that results in or could reasonably have resulted in a release of regulated substances, LAR promptly begins a thorough investigation. A knowledgeable investigation team determines the cause and develops corrective action recommendations to prevent recurrence. Management tracks the resolution of corrective actions. Investigation findings are reviewed with all personnel who could be affected.

Compliance Audits

Audits to ensure the proper functioning of the accident prevention program are conducted at LAR at least every three years. A knowledgeable audit team carefully reviews facility practices and documents findings for management's review and implementation. Resulting corrective actions are electronically tracked until completion. The two most recent audit reports are kept on file.

CHEMICAL-SPECIFIC PREVENTION STEPS

The prevention programs summarized above help enable LAR to manage hazards that may be present at the various processes and ensure safe operations. Additionally, LAR is equipped with safety features to assist in: 1) expedient release detection, 2) release containment and control, and 3) release mitigation or consequence reduction. Safety features utilized at LAR include:

Release Detection

* Routine inspections during shifts

* Targeted use of fixed area hydrocarbon and hydrogen sulfide detectors with alarms

* Hydrogen sulfide (H2S) detectors with alarms on all personnel performing work

* Heat sensors, tied to deluge systems, positioned near certain pumps and key storage tanks

* Flame scanners as part of fired heaters

Release Containment/Control

* Process relief valves that discharge to a flare to capture and incinerate episodic releases or atmospheric relief valves that are accustically monitored

* Carbon filters to remove Volatile Organic Compounds (VOCs) from gas streams

* Amine systems to remove H2S from fuel gas

* Valves (manual or automatic)positioned to allow process isolation

* Depressurizing valves to arrest reactions

* Diking/curbing to contain liquid releases

* Redundant equipment and instrumentation, such as emergency generators at process units, backup instrument air compressors, and diesel-powered firewater pumps and standby batteries for instrument control power

Release Mitigation

* Fire suppression and extinguishing systems

* Deluge systems positioned near key equipment

* Fully equipped onsite fire station

* Trained emergency response personnel, equipped with personal protective equipment

* Plant-wide emergency alarm system, tested at least weekly

* Blast-resistant control rooms to help protect personnel and control systems

FIVE-YEAR ACCIDENT HISTORY

The ConocoPhillips Los Angeles Refinery Carson Plant has a good accident prevention record. Over the past 5 years, No five year reportabel RMP incidents have occurred. All incidents (near misses) that involve EHS releases that have occurred have been carefully investigated and critiqued to prevent recurrence.

EMERGENCY RESPONSE PROGRAM INFORMATION

The Los Angeles Refinery maintains a written emergency response program that is in place to protect worker and public safety as well as the process and the environment. The program consists of procedures for responding to a release of a regulated substance, including the possibility of a fire or explosion if a flammable substance is accidentally released. The procedures address aspects of emergency response, including proper first-aid and medical treatment for exposures, evacuation plans and accounting for personnel after an evacuation, notification of local emergency response agencies, the public, and post incident cleanup and decontamination procedures. In addition, the refinery has procedures that address maintenance, inspection, testing, and use of emergency response equipment. Employees receive training in these procedures to perform specific emergency response duties. The emergency response program is updated based on modifications to refinery processes or other refinery facilities. The emergency response program is reviewed on an annual basis.

Affected personnel are informed of and/or trained on any changes.

The overall emergency response program for the Los Angeles Refinery is coordinated with several agencies. This includes local emergency response officials, local government officials, and industry representatives. The refinery has around-the-clock communications capability with appropriate officials including the Fire Department and Law Enforcement. This provides a means of notifying the public of an incident, as well as facilitating appropriate response to an incident. The Los Angeles Refinery conducts periodic emergency drills that involve the local emergency response organizations and provide information to local emergency responders regarding hazards and locations of regulated substances in the refinery. The refinery is also a member of the Southern California Industrial Mutual Aid Organization.

LAR, with full support from Corporate, has completed a security vulnerability study. Recommendations from this study have been implemented.

PLANNED CHANGES TO IMPROVE SAFETY

Safety enhancing projects underway at LAR include structural member fireproofing upgrades and deluge systems upgrades. Extensive facility siting studies have also been conducted with an emphasis on ensuring the safety of non-essential personnel during non-routine operations such as start-ups and shutdowns. In addition, a more robust evaluation of portable building placement has been implemented to assure worker safety.

Seismic reviews of the facility have been conducted to evaluate the need for retrofit structural strengthening to ensure safety during an earthquake. Retrofit work was completed per LAR's 1999/2004 studies. A new seismic review was completed in May 2009 to validate the previous study and identify any new issues that may have arisen.

Safety is a priority at LAR. The safety program includes various elements aimed at continuous improvement, including annual computer-based training for all employees, annual refresher training classes, safety meetings conducted at least monthly, employee required safety audits, and safety bulletins to alert personnel when a safety concern is noted.

Continuous improvement is also an operational goal. Recommendations from process hazard analyses, audits, incident investigations and employee input provide opportunities to enhance the safety of the refinery.